BIBLIOGRAPHICAL NOTICES.

XX. *Dissertazioni et Altri Scritti Del Signor Dottore* Giacomo Tommasini, *Professore di clinica Medica, nella Pontifica Università di Bologna, relativi alla nuova dottrina medica Italiana, Raccolti in parte da molte opere periodiche e d'altronde, in parte inediti, con note dell' Editore.* Tomo. 1. Bologna, 1821, Tom. 2 & 3, 1823. Tom, 4, 1824. Tom. 5, 1826.

Dissertations, and other writings of Professor Tommasini, *of Bologna, relative to the new Italian medical doctrine, &c.*

While medical science is making such noble achievements, and the march of improvement is rapid and cheering, medical theory seems still to retain its ancient character of instability. Revolutions in this department are indeed quite as frequent as in politics and morals, and if they are not effected at the expense of as much bloody warfare, their champions evince in the contest no small degree of warmth and noisy invective. These changes seem, too, to possess something of a national, or sectional character, each country having, as it were, its own code of medical doctrines, which, however, some individuals among them, are *heretical* enough not to adopt. Passing over former times, to turn our attention to the present, we find the French warm in their espousal and defence of Broussais; the Germans divided, relative to the principles of Hahnemann, or, as they are called, the doctrines of Homöopathie; the English, of Clutterbuck and Armstrong; the Americans of the Eclectics; and the Italians of the principles of Rasori and Tommasini, or the doctrine of counter-stimulus.

Amongst the advocates of this latter doctrine, Professor Tommasini stands pre-eminent; for although not its author, his zealous efforts, his commanding eloquence, and his philosophic reasoning, have, doubtless, done more to diffuse its principles, and give them their present popular currency, than the labours of any other individual. The volumes which have been noted at the head of this article, constitute a portion of the rich and valuable materials, which his genius and industry have brought forth, in support of the truth of the doctrine of counter-stimulus. They are made up, for the most part, of memoirs, or discourses, read before different societies, or institutions, some of them as early as 1806, or even before that time.

The leading article of the first volume, is a highly eloquent discourse, pronounced by the distinguished Professor, on the occasion of his entering upon the directorship of the Medical Clinic of Bologna, in 1815. The subject is—

"The necessity, in medical science, of uniting philosophy with observation—to this, succeeds some very elaborate observations on contagious fevers, and epidemic constitutions, to which is subjoined, a rejoinder to Professor Matthias, on the subjects of petechial fever, and the new medical doctrine. The last article, contained in the first volume, consists of the history of a violent case of enteritis, with a detail of the practice pursued, and a reply of the author to some objections urged against it.

"A young woman, already advanced to the ninth month of pregnancy, and cheered with the prospect of a speedy delivery, was exposed, on a remarkably cool evening, in September, and became affected with a painful sensation of the abdomen. Disregarding it, however, she again exposed herself to the same course, on the following morning. In a short time, violent pain of the abdomen ensued, followed by looseness of the bowels, sickness of the stomach, great thirst, and a remarkable depression of the pulse. Towards the afternoon, she became affected with considerable fever, a vibrating pulse, tension of the abdomen, and pain extending towards the region of the hips and kidneys. Having used frequent clysters of an infusion of chamomile, and small doses of magnesia, without any other effect than an exasperation of the pain of the abdomen, and fearing the occurrence of premature labour, she called a distinguished accoucheur, who prescribed venesection for the relief of the pain of the abdomen; and this was repeated twice in the course of the evening and the succeeding night. The blood presented the usual indications of the phlogistic diathesis. The tension of the abdomen still continued, and the slightest touch was productive of the most exquisite pain. These symptoms, together with the frequent griping of the bowels, unattended with natural discharges, the pungent heat of the skin, the vomiting, and the weak, contracted, and vibratory pulse, all too clearly indicated the case to be one of violent inflammation of the intestines.

"The symptoms pointed out continued throughout the succeeding day, in the course of which, the patient was delivered of a child, which only survived a short time. The relief which followed the delivery was only momentary: the pain, tension of the abdomen, and other symptoms soon recurred with increased violence, and notwithstanding the bleeding was two or three times repeated, and the patient was freely purged repeatedly, by means of small doses of magnesia, &c. she continued to grow worse. The prostration of strength now being extreme, it was resolved to administer a cordial mixture, composed of confectio, alkermes, and laudanum, to which was added a small quantity of wine and water, for drink, whenever the thirst was considerable. This had the effect of quieting, for the time, the irritability of the stomach, and diminishing the frequency of the dejections by stool. These benefits were, however, of only temporary duration, the symptoms all becoming aggravated in the course of five or six hours. Indeed, the case now had assumed a most alarming aspect. It was at this juncture, that Professor Tommasini recommended the employment of the hydro-sulphuret of antimony, which had been found useful in the diseases of the puerperal state, by a physician of Vienna. It was, accordingly, administered frequently in the course of the night, and was retained by the stomach. Indeed, it seemed, as though the vomiting was suspended by the use of the remedy.

"The night having thus passed away, at the dawn of morning the condition of the patient seemed desperate; the abdomen was much distended, and she no longer complained of pain in that region. She merely observed, in a feeble and hoarse voice, that she suffered much from a sensation of internal heat. The hands, feet, legs, and arms were cold, and covered with a clammy sweat; the pulse was small, frequent, and so irregular, as scarcely to be numbered; the forehead was bathed in a cold sweat, the face covered with the coldness of death, and the patient remained immoveable, except when disturbed by the vomiting. All these symptoms awakened a suspicion of the existence of gangrene. Under these circumstances, Professor Tommasini recommended the employment of ice, under the impression that it could not be injurious, and with the hope, founded on the encouragement of Boerhaave and De Haen, that it might prove beneficial. It was accordingly commenced at five in the morning. The patient having tasted it, declared that she found herself refreshed, and after using it, she stated that it relieved the sensation of internal heat. This encouraged her to take it freely, and the professor to administer it with a liberal hand, and in the course of a few hours she had taken frequent and copious draughts of the coldest iced water with lemon juice. After pursuing this practice for a short period, the patient slept for the first time, but with such wandering of intellect, such coldness of the extremities, and feebleness of the pulse, that it was doubtful whether this sleep should be considered favourable, or as the precursor of death. In a short time, however, she opened her eyes, and requested that the ice might be continued. The cold drinks were accordingly administered every two hours, and although the patient drank copiously, the vomiting did not recur, and she again fell into a tranquil slumber, which continued an hour. The coldness of the extremities now diminished, and the pulse became stronger. The patient resumed the iced drinks, which she continued for several days without intermission. She still, however, experienced occasional abdominal pains, but in a much less degree than before. The alvine dejections became less frequent; the vomiting was again threatening, but was dissipated by the use of the ice. The pulse manifestly increased in force, and by degrees warmth returned to the extremities. Some wandering of intellect again took place at night; but the pain was not considerable, neither was there much augmentation of the frequency of the pulse. She fell asleep about 12 o'clock at night, but took the ice whenever she awoke.

"On the following day, the sixth of the disease, after some hours of comfortable sleep, taken at intervals, the calm became still more permanent, the pulse softer, and more regular, the tumefaction of the abdomen subsided, the pain abated, the skin became soft, the dejections liquid, but of a natural smell, and the stomach was only disturbed by occasional flatulence, which was removed by the employment of the ice. The cold drinks and low diet were continued; and towards evening some indications of the establishment of the lochial discharge made their appearance. The patient became again a little delirious at night, and the mammæ began to tumefy.

"The delirium increased somewhat on the subsequent day: the mammæ became tense and painful, the abdomen more tense and uneasy, the pulse febrile and vibratory, and the pain and tumefaction of the abdomen, as well as the marks of excitement, being augmented at night, eight ounces of blood were detracted, which furnished the usual evidences of inflammation. The cold drinks were continued, and antiphlogistic injections were thrown into the bowels; tranquil slumbers succeeded, the lochial discharge became profuse, and a considerable quantity of wind was ejected, for the first time, from the alimentary canal. These circumstances tended to excite hopes of recovery, which were verified on the following day, when the pulse was found quiet, the skin soft and perspirable, the abdomen soft and flaccid, the pain subdued, and the alvine evacuations moderated, while the lochial discharge continued."

The same treatment was continued during the five or six subsequent days, with the addition occasionally of a small quantity of magnesia, acetate of potash, extract of rhubarb, &c. to unload the bowels. On the eleventh day it became necessary to repeat the bleeding, on account of some exasperation of the symptoms, which had the effect, in a short time, of overcoming all the conditions for the relief of which it was practised.

Such is a brief outline of the history of an important case of disease. We have not detailed it from a belief that the practice which was pursued was the best that could have been adopted, but from the conviction, that if properly considered, it is calculated to furnish some very useful indications. The disease was evidently one of what the Italians call the sthenic diathesis, although the prostration of strength was extreme; or, in other words, it was an example of a highly exasperated state of irritation of the alimentary canal, and consequently exacted the free employment of counter-stimulant remedies for its removal. Although the blood-letting was beneficial, in virtue of its counter-stimulant influence, no very striking results were obtained previous to the employment of the ice, which was followed immediately by an astonishing mitigation of all the urgent symptoms. It is precisely under these circumstances that the ontologists would resort to free and continuous purging, acting upon the antiquated absurdity, that "*you must purge until natural stools are produced,*" and thus hazarding the lives of their patients. To this must be added, that vulgar prejudice often prevails to such an extent, as to withhold from a patient, tortured with the most unquenchable thirst, even a mouthful of cold water, and to such minds the idea of allowing copious draughts of iced water, would convey the apprehension of immediate destruction. Yet facts here speak loudly in favour of the employment of cold drinks under the circumstances pointed out, and both reason and common sense proclaim the correctness of the principles which led to their employment. We have at present a patient convalescent from a very violent attack of enteritis, in which copious and repeated venesection, cups, and scarifications over the abdomen, warm fomentations, emollient injections, &c. were not successful in subduing the disease, until assisted by the use of copious draughts of iced mucilage, acidulated with lemon juice. In the treatment of the dengue, which has lately inflicted so much distress upon large portions of our community, and which was constantly attended with violent irritation of the gastro-intestinal mucous membrane, we found nothing so speedily successful in allaying the distressing symptoms which attended the first stage, as the free use of iced lemonade, and the application of pounded ice to the head and epigastrium.

But to return from this digression, to the work under consideration, we find the second volume containing several very important and interesting memoirs and observations. The first article is an exposition of the results obtained in the Medical Clinic of Bologna, during the three scholastic years of 1816–17, 1817–18, 1818–19. This exposition certainly speaks favourably for the doctrine of counter-stimulus, and the practice founded upon it, as out of four hundred and fifty-three patients admitted, within the time specified, thirty-five died, making the ratio of deaths only about seven and one-twelfth per cent. Under the heads of synochus, nervous and typhus fevers, we find fifty-seven cases detailed, of which four died, making the ratio of mortality in those diseases seven and one fifty-ninth per cent. Greater success than this could scarcely be expected from any system of practice, and the results here obtained are certainly well calculated to inspire us with confidence in the doctrines of the Italian school.

The next article gives an account of a remarkable case of constipation of the bowels, which continued for some time without much inconvenience. This is followed by some remarks upon a paper by Professor Mattheis, on the digitalis purpurea, which Tommasini, and most of the Italians, consider one of the most energetic counter-stimulants, a property which its known operation on the animal economy proves it to possess in a very high degree.

The next article is a reply to a second letter of Dr. Mattheis, upon the subjects of petechial fever and the new Italian doctrine. In the course of his reflections, the author insists, with much force of argument, and, we think, with an abundance of facts to bear him out, upon the inflammatory or sthenic character of the fever in question, and consequently upon the propriety of treating it by means of counter-stimulants, instead of bark and stimuli, which were employed by many of his contemporaries. The character of the disease, as well as the results obtained by experience, sufficiently testify the correctness of his conclusions, and the dangerous tendency of the stimulating practice. We regret that we cannot follow him through his arguments.

The second volume concludes with a very eloquent discourse upon the dignity of medicine. It is a well written and highly interesting address, abounding with enlarged views of the science, and calculated to elevate it above the base sordidness with which its walks too often abound.

The third volume is taken up with the consideration of the counter-stimulant properties of digitalis, in which is also contained the reply of the author to some objections made by Dr. Uberto Bettoli against the existence of such a property in the article. It contains the most elaborate discussion of the subject that we have met with, and we regret that from our restricted limits we cannot furnish an exposition of the author's views.

The contents of the fourth and fifth volumes are not less interesting than those which precede. We cannot designate all the articles, but will mention one, upon the subjects of blisters and rubefacients, which, from the ability with which it is drawn up, as well as the sound principles it contains, deserves to be attentively studied. The author, with much justice, ascribes the efficacy of these applications to their power of creating revulsion, and fully exposes the ridiculous notions of those who employ them at one moment to diminish action, and at the next to excite and support the system. Even in the low stages of typhus, in which they have been so much employed for their alleged stimulating influence, the professor clearly proves, that much of the debility and prostration depends upon the irritation being concentrated in some vital organ, and that the efficacy of blisters is owing to the powers they possess of transferring the irritation to some other point, and not to their stimulating operation as alleged by many.

We also find a very interesting discourse on prognostics, which abounds with useful instruction, and displays much critical reflection. The work, finally, concludes with some observations relative to clinical instruction, in which the author draws a comparison between the system adopted in Italy, and that pursued at Edinburgh. The result of his observations inclines him to give the preference to the clinical schools of his own country. Dr. Clarke, however, a distinguished English physician, at that time resident at Rome, took up the cudgels for his "alma mater," and discussed the question of superiority at some length with the Italian professor.

We must now bring these remarks to a close, not however, without stating, that we have been pleased and instructed by the work which we have announced to our readers. Although we are not willing to give full credence to all the items in the doctrinal code of the Italian school, we cheerfully acknowledge our good opinion of many of them. The system has not, however, been sufficiently expounded, at least we have not yet met with any exposition of its principles, which we considered as altogether satisfactory. The work of Rasori has not reached us, and that of Professor Tommasini, on diathesis, announced some time ago, if published, has not yet come to hand. We think it would prove a valuable acquisition to those who are anxious to become conversant with the principles which it proposes to elucidate. E. G.

XXI. *Medico-Chirurgical Transactions.* Published by the Medical and Chirurgical Society of London. Vol. XVI. Pt. I. London, 1830, pp. 235, Pl. II.

This volume, in the value of its contents, is equal to any of its predecessors. It comprises thirteen articles, most of them highly interesting. The initial article is an account of a "case of aneurism of the external iliac artery, for which the femoral artery and subsequently the aorta were tied, by J. H. James, Esq. Surgeon to the Devon and Exeter Hospital."

The subject of this case was a man aged forty-four, of rather spare habit, but not otherwise unhealthy appearance, who had been ill for four months, and was admitted into the Devon and Exeter Hospital, May 7, 1829. The patient was supposed to be affected with diseased hip-joint, and was treated accordingly. After he had been a month in the hospital, Mr. James remarked a tumour in the abdomen, above Poupart's ligament, which did not rise at the pulsations, but when firmly pressed, part of its contents could be emptied, and when the pressure was removed, the blood returned with throbbing; no pulsation was perceptible in the groin or ham; there was slight numbness and much pain in the knee. This tumour increased so fast, that in the beginning of June it occupied the whole of the iliac region, and projected the lower part of the abdomen considerably. The man's constitution was not impaired by hard living; the pulsation of the heart and arteries indicated no aneurismal diathesis, and he could assign no probable cause for the production of this disease. Mr. James determined to perform the operation of Brasdor, revived by Mr. Wardrop, and accordingly, on the 2d of June he tied the artery, about half an inch below Poupart's ligament. During the two days following the operation there was a decided diminution of the tumour, after which it began to increase, and on the 24th of June the integuments had become tense and shining—there was considerable pain—and the health, which had hitherto not been much disturbed, now evidently suffered. After this the tumour increased fast in all its dimensions, the integuments soon became dusky red and œdematous, and it was evident that sloughing could not be remote; at the same time the increase of the tumour towards the umbilicus rendered it imperative to take some step without delay, at least if any thing could be done for the relief of the patient. There being no prospect of a spontaneous cure, Mr. James resolved, as the only chance of relief, to tie the aorta, as was done by Sir Astley Cooper, in a similar case to the present. This operation was performed on the 5th of July. An incision was made, beginning an inch above the umbilicus, and continuing two inches below. The linea alba was scratched through below the umbilicus, and the peritoneum was then divided nearly to the same extent as the external wound. The vessels of the integuments bled copiously. As soon as the division of the parietes was effected, the viscera protruded, and the operator was embarrassed with almost the whole of the bowels, nearly all the colon and a great part of the small intestines being pushed out, and presently quite distended with flatus. The aorta was found without difficulty, pulsating strongly, but it was surrounded with dense cellular membrane, and had a strong peritoneal covering. Mr. James here found it difficult to force the nail and finger between the aorta and spine. He therefore cautiously introduced the point of the aneurismal needle, but when it reached the other side it broke at the handle. The broken part was so sharp that it was necessary to withdraw it. With some difficulty the operator got his finger with Weiss's instrument upon it under the artery. The ligature was then with the proper precautions drawn tight, the tumour became flaccid, and the patient complained of deadness in the lower extremities. The ligature was cut close. The intestines were not without difficulty replaced, the wound secured by the quill suture, large straps and a bandage. The patient suffered much during the operation, was at times very faint, but he revived after the operation; he complained of great pain in both the lower limbs, which on the aneurismal side soon increased to agony, and continued unabated until his death. The temperature of the limbs were maintained as much as that of the trunk, but it fell in both, and he expired three hours and a half after the operation.

On dissection the ligature was found to have been firmly applied to the aorta, five lines below the inferior mesenteric artery, and eleven above the bifurcation of the common iliacs. The ligature included some very dense cellular membrane, and a small vein which was traced along the coats of the aorta, but no other parts. The aneurismal tumour was of enormous size, extending from the upper part of the thigh to the side of the vertebral column, and filling the whole of the ilium. It projected on one side far into the pelvis, and on the other occupied the lower part of the abdomen. The ilium on which it rested was perfectly bare and scabrous, and absorbed nearly through to the acetabulum. The cause of the failure of the first operation was now discovered. The external iliac did not terminate in the common femoral as usual, but gave off two trunks of nearly equal size, and from the inner, which corresponded with the profunda, the epigastric was given off. The ligature had been applied to the superficial femoral, rather more than half an inch below a point which corresponded with the situation of the epigastric. At the point of ligature, the artery was completely obliterated, but there remained a free outlet from the lower part of the sac by means of the profunda.

Mr. James remarks that he should have preferred in the second operation to have placed the ligature round the common iliac instead of the aorta, and it was on this account that he made the chief part of his incision below the umbilicus, which gave him the power of proceeding either way, as circumstances might permit. The difficulties, however, which arose from the protrusion of the intestines and the immense elevation of the tumour, prevented him from commanding the common iliac in such a way as would have enabled him to tie it with safety in a reasonable time. Mr. James was deterred from attempting the operation from the side of the abdomen, in the way Dr. Stevens and Mr. Atkinson tied the internal iliac, from the fear of peritoneal adhesions, which was on dissection found to be too well founded.

The second paper is an account of the removal of a medullary sarcomatous tumour from the cheek of a woman aged forty-four, by James Barlow, Esq. Surgeon, Blackburn, Lancashire. This tumour had made its appearance upwards of ten years previously, after accidentally biting the mucous membrane of the mouth, which incident produced a small painful swelling on the part, which progressively increased. At the time of the operation, the tumour "extended anteriorly from the inferior edge of the right orbit down the cheek, hung pendulous over the contour of the lower jaw, and laterally from the angle of the mouth to near the tragus of the ear, and was remarkably prominent exteriorly." At one period of its growth it pressed so much inwards on the gums, that mastication was accomplished with difficulty, insomuch that she submitted to have all the molar teeth extracted from each jaw. The tumour was slightly moveable, tense, rather elastic, and adherent posteriorly to the mucous membrane of the mouth. The integuments of the cheek were very thin, and presented a pale glossy aspect, and the main surface of the tumour was covered with a net-work of varicose veins. The neighbouring glands were not affected. The facial artery pulsated actively on that part where it passes over the lower jaw.

Various surgeons had been consulted, who advised against any operation, but as the woman was very desirous that an operation should be performed, and her general health appeared favourable, Mr. Barlow consented to operate, which he did on the 12th of May. The patient was seated in a chair, her head inclining on the breast of an assistant, and the operation commenced by two incisions at the upper part of the tumour, a little below the orbit, and extending downwards to near the basis of the lower jaw, meeting superiorly and inferiorly and including in the elipsis the most prominent part of the tumour. On attempting to dissect out the diseased mass from the adhering integuments, a profuse hæmorrhage followed each cut of the scalpel, and a sudden and deathlike syncope seized the patient, which continued for the space of several minutes, accompanied with a feeble tremulous pulse, cold sweats, ghastly countenance, and suspended respiration. The knife was now laid aside, and the elliptical portion of the tumour instantly and firmly grasped between the ends of the fingers, by which manœuvre the bleeding was repressed, and the woman gradually revived. Much blood, both venous and arterial, was necessarily lost during this stage of the operation.

The dissection was then resumed by separating the skin and cellular tissue from the tumour, and to avoid making any opening through the membranous septa of the mouth, the cutting edge of the knife was directed towards the diseased substance, and its whole circumference detached from its extensive adhesions, by drawing it forwards with the fingers of the left hand, whilst the scalpel was employed by the other in completely removing the tumour from its basis. After which, the state of the mouth was examined, by passing thereinto the finger of one hand, and another, of the other into the wound, where the parting membrane was found scarcely to exceed one line in thickness, from the edge of the masseter muscle to near the angle of the mouth; and though the parotid duct was fully exposed in the operation, it escaped being wounded with the knife, or its functions in any respect obstructed.

After securing several arteries with ligatures, which bled freely, the integuments were brought into opposition, and retained by a few sutures, leaving a small opening at the bottom for an outlet to any accumulation of fluid which might collect during the healing of the wound; some shreds of adhesive plaster were then placed between each suture, and a pledget of lint spread with cerate applied thereon, over which a suitable bandage was several times turned to secure the whole.

Little or no constitutional disturbance took place during the healing of the wound, and the woman was completely cured in three weeks, without contortion or paralysis.

Appended to this case, is another which occurred more than thirty years ago, in which sudden death was caused by the entrance of air into a vein during the extirpation of a tumour from the neck.

Next follows a case of ununited fracture of the thigh bone, cured by the application of a silver wire between the fractured extremities, by Dr. SOMMÉ, principal surgeon and professor in the Civil Hospital of Antwerp. The patient was a healthy subject, about thirty years of age. The want of union was attributed to the restlessness of the patient. Five months having elapsed without union taking place, Dr. Sommé determined upon the following operation, analogous to the seton, but exciting inflammation upon a larger surface. This was performed on the 12th of August; we quote the author's own description of the operation:—

> "The patient being placed on his back and supported, I passed a long trocar and cannula at first downwards on the inside of the upper fragment, and made it pierce the skin behind, and a little to the outside; the trocar was then withdrawn, and a silver wire passed through the cannula, and out at the posterior opening. The cannula was then withdrawn, and being replaced on the trocar, they were introduced again above and on the outside of the lower fragment, and made to pass out at the same opening behind. The trocar having been removed, the other end of the wire was passed through the cannula, so that both ends were in contact behind, leaving a loop in front. I then made an incision in front, from one orifice to the other made by the trocar, and drawing the extremities of the wire through the wound, brought the loop between the fractured ends of the bone, and approximated the edges of the skin with sticking plaster."

The limb was confined in a wooden box, sufficiently long to contain the leg and thigh, and so narrow as to serve the purpose of splints. At each dressing the wire was drawn down so as to depress the loop more and more into the flesh. The anterior wound which had been made for the introduction of the loop, cicatrised in about fifteen days; the posterior wound afforded but a trifling suppuration.

Six weeks after the operation the union was distinct; on the 2d of October, Dr. S. divided one end of the loop near the edge of the wound, and drawing down the other, removed it completely; the loop had not quite divided the parts which it encircled. The patient now supports himself on the thigh, without any pain, and what is remarkable, is that there is no apparent shortening of the limb.

In the succeeding paper, we are furnished with an account of a concrete oil existing as a constituent principle of healthy blood, by BENJAMIN B. BABINGTON, M.D.

Mr. Hewson supposed oil to exist in milky serum—this was positively denied by Mr. Hunter, but the fact of its existence was a few years ago proved by Dr. Traill of Liverpool, and more recently it was obtained in a separate state by Dr. Christison. Dr. Babington has shown that it not only exists in milky serum, but is constantly present in the healthy blood of man and other animals.

This oil is obtained from the serum of healthy blood, whether that serum be milky, opalescent or clear, and appears to be the chief, if not the only cause, of the colour of healthy serum. It is of deep yellow hue, is semi-solid, and melts at a temperature of 90° Fahr. It is lighter than water, its specific gravity being .918. From its solution in ether, it crystallizes by very slow evaporation, at a low temperature, in radiated tufts. It burns with a brilliant light, has a faint peculiar odour, resembling that of a wet bladder; forms soap with the alkalies, and in its general characters resembles other animal oils. It is uniform in colour, in general appearance, and in all its properties, from whatever kind of serum it be obtained. The only method by which Dr. Babington has succeeded in separating it from clear healthy serum, is by agitation with æther, though from milky serum, in which it abounds, it may be obtained by means of alcohol, or by simple evaporation. About one-third part of æther should be added to the serum, in a well-corked phial, which should then be reversed a few times, without violent agitation. This movement should be repeated twice or thrice, at intervals of a day or two, when after a final rest of some hours, the æther will be found to have risen to the top of the liquid, and to have acquired by impregnation with oil, a yellow colour of more or less depth, according to the proportion of oil which the serum may have contained. By means of a glass syringe, the ætherial solution may be collected from the surface of the serum, and on evaporation will yield the material in question, together with a small quantity of albumen, which the æther has taken up, and which may be easily separated by a heat sufficient to coagulate it. By a more violent agitation of the æther and the serum, an imperfect coagulation of the latter generally takes place, which in that state entangles the æther so as to prevent its separation.

In proving the presence of oil in the blood, Dr. Babington has established an important fact, and one which will elucidate many hitherto obscure phenomena.

The fifth article is an account of a case of phlegmasia dolens, caused by inflammation of the veins of the lower extremity, excited by malignant ulcer of the cervix uteri, by Wm. Lawrence, Esq. and then follows two cases of extensive inflammation and obstruction of the veins of the extremity, accompanied by a swollen state of the limb—the subject of the first, a phthisical youth, of the second a female, by T. H. Holberton, Esq. Inflammation of the veins has been lately attracting so much attention that we propose devoting a special article to the subject, on an early occasion, and we shall therefore postpone a notice of these cases until that time.

Art. VII. History of a case of stammering, successfully treated by the long-continued use of cathartics, by John Bostock, M. D. The subject of this case was a boy of a robust form, and florid aspect, of a healthy constitution, and more than ordinary activity, both of body and mind. When between two and three years old, and after having acquired considerable readiness in speaking, he was suddenly affected with so great a degree of stammering as to be almost incapable of uttering a single syllable. Two physicians were consulted, who were unable to propose any specific plan of treatment which might afford a prospect of success, but in consequence of a somewhat plethoric state of the child, they advised that a strong purgative should be given. The effect of this medicine was so favourable, that it was repeated three or four times, and always with decided benefit. The complaint, however, shortly recurred, was attacked with the same remedy, and was again subdued. After this, in addition to the purgative plan, a sparing vegetable diet was recommended, and animal food totally abstained from. By a steady adherence to this discipline, for about eight years, the complaint was kept at bay, but whenever any relaxation in the diet took place, or when the purgatives were omitted or too long delayed, symptoms of the impediment immediately appeared. At length, when about twelve years of age, the tendency seemed so far subdued, that a relaxation of the restrictions was not followed by the usual unfavourable consequences; and the boy being then at a public school, it was not so easy to maintain the former discipline. For some time no bad effects ensued, but at length the complaint recurred, and was unusually obstinate, so as to require a long and severe course of purgatives, which was, however, finally successful. During the last two years, the tendency occasionally manifested itself, but it has always been easily removed by a moderate use of purgatives, and by a temperate, though not a rigidly abstemious diet. The boy, who is now in his fifteenth year, may be said to be free from the complaint. He even possesses a considerable rapidity and volubility of enunciation.

Any purgative was found to answer in this case which freely evacuated the bowels. The fæces were, during the attack, in a morbid state, and the necessity of continuing the medicine was judged of as much by the appearance of the fæces as by the state of the symptoms.

Art. VIII. is on the pathology of hooping-cough, by James Alderson, M. D. &c. Four cases of pertussis are related, with the post mortem examinations. In all these cases there was no evidence of pleuritic affection—the structure of the lower and posterior portions of the lungs was very firm and dense—the portions which were the subject of this change, exactly defined by the septa, of a dull red colour, devoid of air, sinking instantly in water—and their slices undergoing no change by ablution. The individual lobules were more dense than in hepatized lungs, and the cellular membrane between them retaining its natural structure, conveyed to the touch the same sensation that is felt on handling the pancreas; the upper portions of the lungs were spongy and crepitant; but little air, however, could be expelled by the bronchial tubes. Most of the smaller tubes were filled with a thick secretion, in one of the cases with false membrane, in all of them the divisions of the tubes were somewhat dilated. Mr. A. has left much to be elucidated in relation to the pathology of this disease.

Art. IX. is a further inquiry into the comparative infrequency of calculous diseases among sea-faring people, with some observations on their frequency in Scotland, by Alex. Copland Hutchinson, F. R. S. &c. &c. In a paper in the ninth volume of the Transactions, Mr. Hutchinson drew the attention of the public to the comparative infrequency of urinary calculi in sea-faring people; his further investigations, the results of which are given in the first part of this paper, are confirmatory of his previous observations. It appears that there were employed in the British naval service, as seamen, marines, and boys, from the 1st of Jan. 1816, to the 1st of Jan. 1829, 331,000 individuals. Of the above population, during the period stated, there were admitted into the only two naval hospitals kept open during these years, 21,910 patients of all descriptions, and extraordinary as it may appear, there has not occurred in the whole number of officers, men, and boys employed in the British Navy, *one* case of stone, from the 1st of Jan. 1816, to the 1st of Jan. 1829.

It further appears, from the inquiries of Mr. H. that calculous affections are more prevalent in Scotland than in England; occurring in the former in the proportion of 1 in 83,300, though only cases observed in the principal towns are included in the calculation—whilst in England, according to Dr. Yelloly's statement, it is only 1 in 108,000.

The succeeding article by GEORGE LANGSTAFF, Esq. entitled "Practical Observations on the Healthy and Morbid conditions of Stumps," will hardly admit of analysis. It consists chiefly of descriptions of a number of preparations in the author's museum, with the histories of the individuals from whom they were taken.

Art. XI. is a case of aneurism of the external iliac artery, in which a ligature was applied to the common iliac artery, by PHILIP CRAMPTON, M. D. &c. The merit of being the first to tie the common iliac artery is due to our able colleague, Dr. Mott—the only one we believe who has imitated this operation is Dr. Crampton, whose case we proceed to notice. The patient was a soldier, aged thirty, with a pulsating tumour extending from about three inches below the crural arch on the right side, to within about three inches of the umbilicus. The tumour was divided, by a furrow in the line of Poupart's ligament, into two portions. There was also a pulsating tumour about the size of a pullet's egg in the right ham. He had much pain, so as to prevent him from walking. He attributes his disease to a fall received in wrestling about four months before. He was prepared for the operation by several bleedings, low diet, daily purging, and the digitalis. On the 18th of July, being considered in a favourable state, the operation was performed by Mr. Crampton, and as his mode differed from that adopted by Dr. Mott, we shall give the details of the operation.

"The first incision commenced at the anterior extremity of the last false rib, proceeding directly downwards to the os ilium; it followed the line of the crista ilii, keeping a very little within its inner margin, until it terminated at the superior anterior spinous process of that bone; the incision was therefore chiefly curvilinear, the concavity looking towards the navel. The abdominal muscles were then divided to the extent of about an inch, close to the superior anterior spinous process, down to the peritoneum; into this wound the forefinger of the left hand was introduced, and passed slowly and cautiously along the line of the crista ilii, separating the peritoneum from the fascia iliaca, the peritoneum touching the fore part, and the fascia iliaca the back part of the finger. A probe-pointed bistoury was now passed along the finger to its extremity, and by raising the heel of the knife, while its point rested firmly on the end of the finger as on a fulcrum, the abdominal muscles were separated from their attachments to the crista ilii by a single stroke. By repeating this manœuvre, the wound was prolonged until sufficient room was obtained to pass down the hand between the peritoneum and the fascia iliaca. Detaching the very slight connexions which these parts have with each other, I was able to raise up the peritoneal sac with its contained intestines on the palm of my hand, from the psoas magnus and iliacus internus muscles, and thus obtain a distinct view of all the important parts beneath; and assuredly a more striking view has seldom been presented to the eye of the surgeon; the parts were unobscured by a single drop of blood; there lay the great iliac artery, nearly as large as my finger, beating awfully at the rate of 120 in a minute; its yellowish-white coat contrasting strongly with the dark blue of the iliac vein, which lay beside it, and seemed nearly double its size; the ureter in its course to the bladder lay like a white tape across the artery, but in the process of separating the peritoneum, it was raised from it with that membrane to which it remained attached. The fulness of the iliac vein seemed to vary from time to time, now appearing to rise above the level of the artery, and now to subside below it. Nothing could be more easy than to pass a ligature round an artery so situated. The forefinger of the left hand was passed under the artery, which, with a little management, was easily separated from the vein; and on the finger, (which served as a guide,) a common-eyed probe, furnished with a ligature of moistened catgut, was passed under the vessel. A surgeon's knot was made in the ligature, and the noose gradually closed, until Mr. Colles, who held his hand pressed upon the tumour, announced that 'all pulsation had ceased!' A second knot was then made, and one end of the ligature cut off short. On examining the vessel after it had been tied, it was found to be full, and throbbing above the ligature, but empty and motionless below it. The external wound was united by three or four points of suture, and supported by long straps of adhesive plaster. The operation was completed in twenty-two minutes; the patient, who was a firm minded man, made no complaint during the operation, not even when the ligature was closed upon the artery. The tumour, immediately after the operation, was diminished nearly one-third, the diminution being confined to the abdominal portion; ten minutes after the operation the pulse was 96; at 7 P. M. Mr. Stringer finding the pulse full and bounding, took twenty ounces of blood from the arm; at 10 P. M. I found him tranquil, no pain, pulse 88; the limb, with the exception of the toes, warm; saphena vein full; additional flannel was wrapped round the foot."

The patient appeared to be doing well, except that an obscure pulsation was perceived on the second day after the operation, which afterwards became more distinct. On the eighth day the ligature came away, but was lost in the bed.

On the tenth day the wound was quite healed, with the exception of about an inch; the pulsation in the tumour was nearly as strong as before the operation, but there was no pulsation in the femoral artery below the crural arch; the whole bulk of the tumour was reduced one-half. In the evening, while sitting up in his bed taking some gruel, the blood suddenly gushed from the wound, and deluged the bed. He fell backwards, and expired in less than a minute.

Dissection.—The common iliac, at about three-fourths of an inch from the bifurcation of the aorta, was lost in an oblong tumour, about three-fourths of an inch in diameter, and one and a half in length; the tumour terminated upon, but did not communicate with, the aneurismal sac. On cutting into the tumour, about half an ounce of greenish pus flowed from the wound, and discovered the artery, which appeared somewhat contracted at one part, and its coats deeply indented, but not cut through, marking the place where the ligature had been applied. On blowing into the iliac artery from above, bubbles of air escaped freely from the external wound from whence the blood had issued; water injected by a syringe escaped by the same passage, clearly establishing the important fact, that the ligature, which was of catgut, had been dissolved by the heat and moisture of the wound, and thrown off, before the obstruction of the artery, or the coagulation of the blood in the aneurismal sac, had been completed. It further appeared that the dissolution of the ligature had caused a small abscess to form in the place which it occupied. On slitting up the artery, the internal and middle coats were found to be completely divided in the whole circumference of the vessel, and small portions of lymph adhered to its internal surface. The popliteal aneurism was far advanced towards a cure; the contents of the sac were quite solid, and the tumour was reduced to about the size of a walnut: the artery, for six inches above the sac, was filled with a firm coagulum.

Dr. Crampton observes, that by the manner of operating adopted by him in the preceding case, the tying the common iliac artery is not only a feasible but an exceedingly easy operation. The difficulties which Dr. Mott encountered, he thinks, were owing to his incision having been made too low.

> "This, in the first place," says Dr. C. "brought him in contact with the aneurismal tumour, from which he was obliged, with great labour, and considerable risk, to detach the peritoneum; then he had the whole mass of the tumour between him and the artery which he was to tie: and lastly, he had the intestines pressing down upon him, and producing such a complication of difficulties, as I believe few men but himself could have encountered with success."

The next article is on the glanders in the human subject, by JOHN ELLIOTSON, M. D. &c. The author in this highly interesting paper establishes the fact of glanders being communicable by infection to the human subject; he relates two cases of this disease treated in St. Thomas's Hospital, adds one case which occurred in Ireland, another communicated to him by Mr. Parrott of Clapham, two from Mr. Travers's work on Irritation,* and three cases from German Journals; some extracts are also given descriptive of the disease in the horse.

We shall relate one of the cases treated in St. Thomas's Hospital. A boy aged seventeen, was admitted March 19th, 1829. Had been attacked twelve days previously by pain in the right hypochondrium, extending up the chest, dyspnœa, and rigors, which disappeared next day, but recurred on the day following, and disappeared again by the end of the week, under the use of leeches and purgatives. Five days before his admission, a pimple appeared upon the right side of the nose, which increased and suppurated, and the surrounding parts swelled and grew red. On admission, the upper half of the face, including the eyelids and the nose, with the portion of the cheek on each side, especially on the right, was greatly tumefied, so that the eyes were closed. The eyelids and swollen portions of the cheeks were red and hot, dry and shining, but the nose was dark-coloured, and on its right half, black, cold, and senseless. From around the gangrened portion of the nose and some other points a little pus was oozing, as well as a thin, dark-coloured fluid, and *from the nostrils a thick discharge of a deep yellow colour, here and there a little bloody, was taking place*, exceedingly copious from the *right* nostril. Several *hard* phlyzacious pustules existed on and immediately around the nose, still principally on the right side, and in various parts of the trunk and extremities. Tumefactions were observed in both forearms and in the back of the right hand. Some of these were hard, others softening into suppuration. The temperature was high; the pulse 136, and sharp; the tongue white and rather dry. The respiratory murmur was indistinct at the right lower part of the chest, and the respiration quick and difficult. The gums were slightly turgid. Fourteen ounces of blood were taken from the arm and became both buffed and cupped. Some of the tumefactions were cut into, and large quantities of pus discharged. Lint soaked in a solution of the chloride of soda, and covered with a poultice of stale beer grounds, was applied over the nose fresh every hour, and a common poultice to the abscesses which had been opened. An ounce of castor oil was given, and the diet restricted to slops, milk, and arrow-root.

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* Mr. Travers was not aware that these were cases of glanders.

"Late in the evening two greenish and very offensive stools were passed involuntarily, and a little delirium was observed. Tumefactions had begun on both legs, one upon the left hand, and one upon the right elbow. The next morning more tumefactions were seen upon the extremities, red as all the others had been: but the others had now acquired a purple tint, and the wounds looked dark. The forehead was swollen and red, and more pustules had formed upon the face. There was constant agitation, frequent delirium, profuse diarrhœa, and there had been no sleep. Mistura cretæ composita was prescribed, sixteen leeches applied to the temples, and strong beef tea added to the diet.

"In the evening the diarrhœa was checked, but the upper lip had grown very dark, sordes encrusted the teeth, the surface, still hot, was covered by a profuse sweat, and many new hard pustules were seen upon the trunk and extremities. The pulse had become soft, and was small and rapid. Twenty-five minims of tinctura opii was given in the first dose of the mistura cretæ composita, and one grain of the sulphas quinæ every four hours prescribed. The oleum terebinthinæ was substituted for the solution of the chloride of soda.

"He was calm after taking the opium, but about four o'clock in the morning was observed to breathe with more difficulty, to be unable to swallow, and to be constantly delirious; and from that time he sank gradually, and expired at six.

"I was not present at the inspection, but understand that there were proofs of a violent pleuro-pneumonia in the lower part of the right side, and that two ounces of healthy pus was found between the adherent lung and diaphragm. A dark red patch existed in the stomach, and several at irregular distances throughout the intestines. The mucous membrane of the stomach was very lacerable at that spot. The other viscera, and all the contents of the head as well as the veins of the extremities, were reported healthy: but the mucous membrane of the nostrils was not examined. The abscess which had been opened in the back of the right hand, communicated with the joint of the metacarpal bone of the middle finger, but those on the arm did not communicate with the elbow."

The head was not allowed to be examined in this case, but in another case in which a full investigation was made, a cluster of tubercles was found in the cellular membrane exterior to the pericranium of the left superciliary ridge, and in the right frontal sinus, exactly similar to those observed in the frontal and other sinuses of the horse after acute glanders.

The concluding article is an account of the dissection of the parts concerned in aneurism, for the cure of which Dr. Stevens tied the internal iliac artery, at Santa Cruz, in the year 1812, by Richard Owen, Surgeon. We noticed in our last number that Mr. Lawrence has expressed some doubts of Dr. Stevens having actually applied the ligature to the internal iliac—all doubt has now been dissipated by an examination of the preparation. Sir Astley Cooper on receiving it, addressed the following note to Dr. Stevens.

"Dear Sir—I have examined your preparation in the presence of Mr. Clift and Mr. Owen, and am perfectly satisfied of the existence of the aneurism for which you operated, and of the obliteration of the internal iliac artery which you tied."

The artery was found to be entirely obliterated for the space of an inch where the ligature had been applied, but to retain its natural diameter for half an inch above its division. The obturator artery, which arose from the upper part of this pervious portion, was, as well as the ischiatic, entirely obliterated, but the sacro-lateral artery was pervious, of the size of a crow-quill, and passed inwards to the sacral foramen, whilst the glutæal artery of its natural size, received close to its origin, two vessels as large as the preceding, given off from the sacro-lateral artery, near the third and fourth foramina of the left side; the anastomoses of the sacro-lateral arteries with each other and the sacra-media, were large and tortuous.

The operation of tying the internal iliac has now been performed five times. First, by Mr. Stevens—second, by Mr. Atkinson, of York—third, by a surgeon in Russia—fourth, by Mr. Thomas, of Barbadoes—and fifth, by Dr. Pomeroy White, of Hudson, New York. An account of this last case will be found in the first volume of this Journal, p. 304.

XXII. *Elements of Chemistry, including the recent Discoveries and Doctrines of the Science.* By EDWARD TURNER, M. D., F. R. S. E. Professor of Chemistry in the University of London, &c. Third American, from the Second London edition, with notes and emendations. By FRANKLIN BACHE, M. D. Philadelphia, 1830. pp. 578.

Next to the satisfaction of having written a deservedly popular treatise on chemistry, may be ranked that of having one's book revised and edited by a skilful and learned chemist as accurate and pains-taking as Dr. Bache. Nothing short of actual examination would have convinced us that so well printed and creditable a work as the second English edition of Dr. Turner's elements could be so vastly improved as it has been. Dr. Bache has examined every statement and figure in the original, corrected slips of the pen and errors of the press, given symmetry to the whole work, and increased its value by judicious notes, containing either additional facts, corrected statements, or sensible criticism. The author is certainly under great obligations to his editor for the labour which he has bestowed on his undertaking, and we do not doubt that the text of this edition will be resorted to as the standard in any future reprint of the work in England. We can confidently recommend the elements of Dr. Turner as the most concise, yet copious, accurate, and perspicuous, popular treatise on chemistry in our language. The science has grown to its present extent and importance so rapidly and recently, that scientific men, who do not devote themselves to the study, and keep pace with the news of the month, find themselves continually at fault in the midst of unknown terms and new theories. It is therefore of no small importance, and especially to physicians, to be in possession of a clear and succinct account of the present state of the science, which shall enable them to profit by the intelligence of the day. The book before us is, we think, particularly suited for this purpose. Dr. Turner's expositions of chemical theory are in general sound and lucid, and his language is neat and perspicuous. The reader will find the doctrine of definite proportions, the corner stone of modern chemistry, laid down with great clearness, and if he is beginning to grow rusty in his knowledge of the science, cannot do better than to make himself master of this theory. He will thus do more to facilitate his future studies than by any other means. One of the most striking changes in the aspect of chemical science, to one who has not watched its progress for some years, is the great accession to the list of elementary bodies. An entirely new class of substances, chlorine, iodine, and bromine, so closely allied in their properties as to encourage the hope that they will yield to analysis, has confounded all our former learning, and degraded the oxygen of Lavoisier to a secondary rank. But it is in organic chemistry, that the most interesting researches to our profession, have been made. The discovery of the vegetable alkalies bids fair to revolutionize the whole science of pharmacy. A physician can now carry a bale of bark in his pocket, and a pound of opium in an ounce vial. Should future researches be as well rewarded as those of Sertuerner and Robiquet, of Pelletier and Caventou, we may hope in the same manner to concentrate all the most valuable remedies of the vegetable kingdom, and thus preserve them from change and decay. It is in this manner that the men of different professions are continually advancing the interests of each other; and there is no one science to which the physician is under deeper obligations, for the assistance which it has rendered the healing art, than to chemistry. To be ignorant of chemistry should be almost as great a reproach to a physician, as to be unacquainted with anatomy itself. D. B. S.

XXIII. *Observations on the Blood.* By WILLIAM STEVENS, M. D. &c. &c. Read at the Royal College of Physicians. May 3d, 1830. London, 1830, pp. 19, 8vo.

It would be a work of supererogation to descant, at the present day, on the absurdities of the old humoral pathology. No one, so far as we know, having any claims to authority, now raises a voice in its defence—so signal and complete has been its overthrow. But there is perhaps no hypothesis, however absurd, which does not rest upon some facts, and it may be questioned, whether the adversaries of this system have not been over-zealous in declaring against it a war of extermination, and in refusing to save from its wreck any of the material of which it was constructed. It is exceedingly natural that in their zeal to overcome a doctrine which exercised for nearly thirteen hundred years so pernicious an influence upon our science, that nothing should satisfy the opponents of humoralism except its total overthrow—but the ardour of discussion has now ceased, the evils of that doctrine are only very remotely felt, and we may therefore form an impartial judgment respecting it, and should preserve such of its materials as possess value, from the destruction which has overwhelmed the structure itself.

The solids unquestionably perform the most important role in the living economy, and their physiological function and pathological condition merit the most especial attention: but do the solids constitute the whole of the living system? are they not pervaded through every part by a vital fluid? are not the solids constructed out of the materials of this fluid, and do they not return again to it, their effete materials? Is it not reasonable then to believe that this fluid, circulating through every portion of the solids, conveying every where the materials for their reparation, and receiving into its current the materials which have subserved their office in the economy, should become changed by derangement of the organs by which it is elaborated, variation in the materials of which it is formed, or cessation of the functions by which its useless materials are eliminated. It must be confessed that this does take place, and that this fluid when so altered must produce an effect upon the solids through which it circulates. The precise nature of these changes in the blood, and the effects they produce upon the solids, are, it is true, not yet known. But if this ignorance is in some degree owing to the inherent difficulties of the subject, it must be admitted, that still more is due to want of attention to its investigation. With the aid, however, of modern chemistry, and the more perfect means of analysis it affords, much might be expected from a well-directed series of the researches, and we know of no subject, the investigation of which promises more important results to medicine, or more imperishable fame to the successful inquirer.

The attention of pathologists has been awakened to this subject. Dr. Reid Clanny, of Sunderland, has proved by means of a very ingenious apparatus, that in typhus a marked alteration takes place in the blood.

The Medical Society of Paris, in December, 1826, proposed, as the subject of a prize dissertation, the determination of the alterations of the blood in disease. Two memoirs were offered, neither of which obtained the prize—though they have been judged worthy of being printed in the Transactions of the Society, and medals of encouragement have been awarded to their authors. The Society have again offered a prize for the successful elucidation of this question.

The founder of physiological medicine in one of the last numbers of his Journal that has reached us, has also strongly urged the investigation of this subject. He observes, "It is time that we should seek what part the fluids perform in the production of diseases. It is time that we should endeavour to solve this question, always environed with difficulties, and far from being as yet elucidated by pathological facts."*

Dr. William Stevens, of Santa Cruz, well known to the profession as having been the first who had the boldness and skill to apply a ligature to the internal iliac artery, has devoted much attention to the investigation of the changes of the blood, especially in fevers. The result of his observations he intends shortly to lay before the profession, and we have no doubt, from the information we have had the pleasure of deriving from him during his recent visit to this country, and the zeal and good faith with which he appears to have conducted his experiments, that much interesting information may be expected from his work.

The small memoir, the title of which is prefixed to this notice, was read to the College of Physicians of London, and contains merely a summary of his results, without any of the facts or observations upon which they are founded. It would be impossible then to form any estimate of the accuracy or incorrectness of these results. It may be interesting, however, to our readers to know what the author intends to prove, and we shall therefore give an analysis of his memoir, and when his large work appears, we shall not fail to submit an account of it to ou readers.

Dr. Stevens says that there is sometimes met with in the West Indies a malignant form of yellow fever, in which there is no excitement in the commencement sufficient to injure the solids, and death is produced by a change of the blood, which has become dissolved, nearly as thin as water, almost as black as ink, and totally incapable of either stimulating the heart, or supporting life. In both cavities of the heart the fluid is equally black, and in the whole vascular system, all distinction between arterial and venous blood is lost. A close attention to some of these cases led him to believe "that the blood was more concerned as a *cause*" *of fever* than is generally supposed, and induced him to institute some experiments to ascertain the nature, cause, and effects of the changes in the blood.

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* Ann. de Med. Phys. July, 1830, p. 108.

"On examining, soon after death, the black and dissolved blood that had been taken from the heart of those who had died of the yellow fever, it was very evident, even at first sight, that several great changes had taken place.

"*1st.* The blood was more fluid than natural, partly from an excess of serum, probably produced by a stoppage of the secretions, and the retention of those fluids in the system, which ought to have been thrown out by the secreting organs. In the first stage of the disease, the structure of the red globules is frequently deranged, which is evident from the fact, that in those fevers, the colouring matter is often detached from the globules, and dissolved in the serum, giving to that part of the blood, when it separates from the fibrin, a bright scarlet colour, and this colouring matter cannot be separated from the serum, either by filtration, or any other mechanical means; but as the disease advances, this red colour is lost, and the whole circulating current becomes black, and so thin that it has no longer any resemblance to the blood of health.

"*2d.* The colour of the whole mass of blood, both in the arteries and veins, was changed from its natural scarlet or modena red, to a dark black. I have frequently filled one glass with the black fluid taken from the heart, and another with the black vomit taken from the stomach. They were both so unlike the blood of health, and resembling each other so completely, that it was almost impossible to distinguish the one from the other, and from its appearance it was very evident that such diseased blood could no more stimulate the heart or support life in the solids, than putrid water can nourish vegetables, or carbonic acid gas support respiration.

"*3d.* In violent continued fevers, the saline matter, like the fibrin, appears to be exhausted faster than it enters the circulation; the blood soon loses a great proportion of its saline impregnation, it loses entirely its saline taste, and we shall afterwards see that the black colour is a certain proof of the entire loss, or at least of the great diminution of the saline matter.

"*4th.* The blood, though dissolved, was not yet putrid, for the blood is so essential to life, that putrefaction of this fluid cannot exist in a living body. But dissolution is the first step towards putrefaction; and when this to a certain degree takes place, death of all the solids must follow.

"The dissolved state of the blood," says Dr. S. "is the *effect* and *not the cause* of fever. But as it was evident in many of the fatal cases, that this dissolution was the sole cause of death, it then became an object of importance to find out some agent capable of preventing this fatal change in the whole circulatory current. This agent Dr. S. conceives to be saline matter." Saline matter, says Dr. S. "is invariably found in healthy blood, and the presence of this seems actually necessary to its healthy state; for, when it is lost in disease, the vital fluid goes fast to decay. As this saline matter was lost or greatly diminished in the blood that had been dissolved in bad fever, and as the loss of this was probably the chief cause of the mortality, I was induced to try the effects of the saline medicines in preventing the bad symptoms that are so generally met with in the fevers of hot climates; and, after having used several of the saline medicines in a great number of cases, I was completely convinced that those agents had, when used at a proper period of the disease, a specific effect in preventing the dissolution of the blood. In all the cases in which they were timely and properly administered, they prevented the bad fœtor in the breath, the stoppage of the secretions, the yellow colour in the skin, the black vomit, and the other fatal symptoms which were so common in those cases when these medicines were not used."

Dr. S. was next induced to try what effect these agents would have when mixed with the blood itself while it was still warm and fluid, and just drawn from the system, and he found that every one of them possess the property of giving a rich arterial colour to venous blood.

To ascertain the effects of different agents on the blood, Dr. S. made a number of experiments, and in these he observed—

"1st. That all the acids give a dark colour to the colouring matter of healthy blood; and in proportion to their strength, they change the colour from red to black, as certainly as they change vegetable colours from blue to red. When any one of the acids was diffused in a little water, and then mixed with the fluid blood, the colour of the whole was immediately changed from red to black. Even the vegetable acids so completely blackened the blood, that the addition of a little water converted the whole into a fluid exactly resembling the black vomit.

"2d. The pure alkalies have a similar effect with the acids in changing the colour of the blood from red to black, though not in the same degree.

"3d. The neutral salts immediately changed the venous blood from a dark modena red to a bright arterial colour. Even those salts that contain a slight excess of alkali, the sub-carbonate of soda for example, immediately give to venous blood a beautiful bright arterial colour.*

"4th. When the neutral salts were mixed with the dark and dissolved blood that had been taken from the heart of those who died of the yellow fever, even this black and dissolved fluid was immediately changed from black to a bright arterial colour."

The presence of saline matter in the blood, observes Dr. S. "is not accidental, for it is as essential, and exists as invariably in healthy blood, as either fibrin, the albumen, or the colouring matter.

In a work which will soon be published, Dr. S. says he will endeavour to prove,

"First, that the blood owes its red colour to this saline impregnation. Black appears to be the natural colour of the colouring matter; for when we take a clot of blood, and deprive it completely of its saline matter, by immersing it in fresh water, the colouring matter soon becomes so black, that even oxygen has no effect in changing its colour. But when we immerse this black clot in an artificial serum, made by dissolving some saline matter in water, the black clot in this clear fluid assumes almost immediately a beautiful bright arterial colour. Secondly, that to this saline matter, the fibrin owes its fluidity, for it remains fluid only while mixed with the saline matter, and becomes solid when the saline matter leaves it to unite with the serum. Thirdly, that the change of form which this saline matter undergoes, when the blood changes from arterial to venous, and from venous to arterial, changes its capacity for caloric, and gives it an influence in supporting the temperature of the system. The saline impregnation also adds to the stimulating quality of the blood, and assists even in a high temperature in adding to its power of self-preservation.

"The facts which he will endeavour to establish, he adds, are partly these.

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* "The effects of these experiments are best seen when they are made on healthy blood, the agents ought first to be dissolved in a little soft water, and then well mixed with the warm blood before it begins to coagulate."

1st. That in violent continued fevers, even where proper means are used to protect the organs by reducing the excitement, chemical changes often take place in the whole circulating current; and in these fevers, these changes are almost always the sole cause of the mortality. In proportion as the disease advances, the blood loses its solid part, and becomes thin; it loses its saline matter, and becomes both black and vapid; it loses its preservative power, and goes fast to decay; it loses its vitality, and in a short period becomes totally incapable of either stimulating the heart, or supporting life. The degree, to which these changes take place, is in proportion to the malignancy of the disease. In the yellow fever, in the African typhus,* in the plague, &c. dissolution of the blood is a common cause of death. The typhus of cold countries is comparatively speaking a mild disease; but even in the common typhus similar changes take place in the blood, though in a less degree. This has been clearly proved by the important experiments of Dr. Reid Clanny, of Sunderland.

"2d. In all cases of bad fever, the loss of the saline, or preservative power, appears to be in every instance the chief cause of the entire dissolution of the vital fluid.

"3d. Where proper means are used to protect the organs from the increased excitement during the early stage of the disease, and after the excitement is sufficiently reduced, when proper nourishment is given, and certain saline medicines are timely and judiciously used, the bad symptoms are generally prevented. When proper saline medicines are used, they do not fret the stomach, they act on the intestines as much as is necessary, they keep up all the secretions, particularly that of the kidnies, and enough is absorbed to enter the circulation, and prevent the dissolution of the blood, and preserve it until the fever abates, and all the danger is past. This I am warranted to state as a fact, inasmuch as this treatment was commenced in the West Indies in 1827; and since then it has stood the test in several hundred cases of the West India fevers, where it has been tried both by myself and others, and with scarcely a single loss, when we were called to the patients within the first twenty-four hours after the attack, and with very few death when we were called in previously to the commencement of the fatal symptoms. My friend Dr. George William Stedman, now of St. Thomas, and others, have adopted the same treatment, and the result in their practice has been similar to that which occurred in my own cases."

"It may be clearly proved," Mr. S. asserts, "that in the West India fevers, those patients that are left entirely to themselves, have a much better chance of recovery than those who are treated with emetics, calomel, or antimony, opium or acids; and that these remedies, instead of being useful, add greatly to the sufferings of the patients, they decidedly increase the very evils they are meant to relieve, and add greatly to the mortality in hot climates."

XXIV. *The Practice of Medicine, according to the Principles of the Physiological Doctrine.* By J. Coster, M. D. Translated from the French. Philadelphia, Carey & Lea, 1831. pp. 319, 8vo.

This is one of the numerous excellent manuals composed for the use of students, and for which we are indebted to the French. We have already spoken of them in general with approbation, and particularly recommended several, which have become naturalized among us by a translation. The immediate object of this notice exhibits a compendious view of practical medicine, prepared in accordance with the physiological doctrines—doctrines which are unquestionably winning no little favour for themselves wherever they become known, and which, though attracting considerable attention in this country, are retarded in their progress from the want in our language of works illustrative of them. This desideratum will, however, soon be supplied by translations of the principal works of the great founder of these doctrines.

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* Or the Bulam fever of Chisholm.

To return to the work at the head of this article; it is obviously impossible to present an analysis, or to review it, within the limits to which we are here restricted, we can only express our favourable impressions in regard to it, and recommend it as an excellent digest or manual of medical practice.

XXV. *Pathological and Practical Researches on Diseases of the Brain and the Spinal Cord.* By JOHN ABERCROMBIE, M. D. Fellow of the Royal College of Physicians of Edinburgh, &c. First American from the second Edinburgh edition, enlarged. Philadelphia, 1831, pp. 464, 8vo.

Our readers are already, in some degree, acquainted with the value of this work, through the interesting cases selected from it, which enrich the periscope of several of the numbers of this Journal.

Its merit we conceive to depend upon its numerous cases. It is correctly observed by the author, that there has been for some years a progressive and remarkable change of opinion in regard to the mode of conducting medical investigations. There appears to have been a tacit but very general admission of the fallacy of medical hypothesis, and an increasing conviction of the indispensable necessity of founding all our conclusions in medical science upon an extensive and accurate acquaintance with the pathology of disease. As presenting then "a faithful record of observations undistorted by hypothesis, a series of facts which every practitioner may study for himself, and from which he may acquire a knowledge of phenomena, and of their relations to each other, nearly in the same manner as he does from his own observation," this work possesses a permanent value.